REMARKS

Claims 1-2 and 5-26 remain in this application, claims 3 and 4 having been previously cancelled. Claim 27 is being added by the present amendment.

New claim 27 is supported by the teachings throughout the specification, including, for example, the teachings contained in the following portions of the specification: abstract; Figs. 2-11; Fig. 13; column 1, lines 46 to 57; column 1, line 64 to column 2, line 17; column 3, line 61 to column 4, line 11; column 4, lines 34 to 56; column 5, lines 10 to 64; column 6, lines 5 to 16; column 6, line 64 to column 7, line 10; column 7, lines 29 to 43; column 8, line 27 to column 9, line 15; and column 9, line 9 to column 10, line 67.

In the Office Action dated January 8, 2003, claims 5-14, 15-24, 25 and 26 were rejected under 35 U.S.C. § 112, first paragraph, claims 5-14, 15-24, 25 and 26 were rejected under 35 U.S.C. § 112, second paragraph, claims 5-14, 16-24, 25 and 26 were rejected under 35 U.S.C. § 103(a) and claims 5-26 were rejected under 25 U.S.C. § 251. Each of these rejections are addressed below.

The 35 U.S.C. § 112, ¶ 1, Rejections

Claims 5-14, 15-24, 25 and 26 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. However, the Examiner's detailed comments setting forth the basis of the various 112, first paragraph, rejections indicate that the rejections are actually based on enablement rather than written description. Accordingly, Applicants have treated the Examiner's rejections as enablement rejections where this appeared appropriate in view of the Examiner's detailed comments.

Claims 5-8, 15-18, 25, and 26 were rejected under 35 U.S.C. § 112, first paragraph, on the basis that the specification allegedly fails to adequately teach how each element claimed as the transparent substrate is actually employed as the transparent substrate. Applicants respectfully traverse.

Based on the teachings in the specification, one skilled in the art of thin films would readily understand how to deposit thin films to form the claimed filter arrangements on each type of disclosed and claimed substrate. In particular, those skilled in the art would recognize that they could use one or more of the processes disclosed in the specification (e.g., vapor deposition, photo-lithography, dipping, spraying, or sputtering) to form the claimed filter arrangements on the disclosed substrates. Furthermore, one skilled in the art could accomplish the same without undue experimentation. Indeed, the specification makes clear that processes described at column 8, lines 27 through 65, for making the filter arrangements described in Table 4 or the process described at column 9, line 42 through column 10, line 12 can be used in connection with any of the substrates disclosed at column 10, lines 53 through 67. Thus, the specification of the present application does reasonably convey to those of ordinary skill in the art that the inventors were in possession of the invention claimed in claims 5-8, 15-18, 25 and 26 at the time the application was filed. Moreover, because one skilled in the art could practice the invention without undue experimentation employing any of the recited substrates based on the teachings in the specification, the rejected claims are also fully enabled.

In connection with the rejection of claims 5-8, 15-18, 25 and 26, the Office Action further states: "*Applicant is respectfully noted that applying the construction to the various applications does not give the adequate teachings as to the use [of] the various applications as the substrates.*" (Office Action, p. 3 (emphasis in original).) One skilled in the art would readily understand from the

teachings of the specification, however, that the stated applications of the invention described at column 10 also describe a corresponding substrate for the stated application. Indeed, a stated purpose of the invention is to make optical filter arrangements having differential reflection and substantially uniform transmission characteristics. Each of the optical filter arrangements comprise first and second optical thin film-based coatings disposed on a substrate. From the teachings in the specification, those skilled in the art would readily appreciate that the substrate may take on a variety of forms. For example, the background section of the specification specifically notes the problems associated with the prior art. In relevant part, it states:

> All patterns, signs, and logos on shop windows, sunglasses, windscreens and other transparent constructions are visible when viewed from both sides of the constructions. In many cases, it is preferable that such patterns, logos and signs be visible when viewed from one side only For example, it is desirable that a viewer has unimpeded vision when looking through a pair of sunglasses or a car windscreen, and stickers, decals and any other opaque logos or images which are intended to be visible when viewed from the outside will impede the vision of the person wearing the sunglasses or looking through the windscreen.

(Col. 1, lines 7-18.) The Background section of the specification goes on to discuss a specific prior art construction for sunglasses and that of an ophthalmic lens, in which the lenses in both cases were used as the substrates. Thus, the instant specification leaves no doubt that the applications described in column 10 of the specification also describe a corresponding substrate. Accordingly, the rejection of claims 5-8, 15-18, 25 and 26 is without merit and should be withdrawn.

Claims 5, 15, 25 and 26 were rejected under 35 U.S.C. § 112, first paragraph, on the basis that the specification allegedly fails to teach how the first and second reflecting areas cooperate to

define a pattern that is visibly perceptible when viewed from the front side and imperceptible when viewed from the back side of the substrate. According to the stated rejection, "[t]he essential element for making such perceptible and imperceptible characters is the metallic layers of different thickness. Applicants respectfully traverse.

While some of the embodiments described in the specification teach the use of metal layers having different thickness to balance transmission, the specification also describes alternative embodiments that do not rely on differences in metal thickness for balancing transmitted light, yet still produce a pattern that is visibly perceptible when viewed from the front side of the substrate and substantially visually imperceptible when viewed from the backside of the substrate. For example, in Fig. 3A and the accompanying description starting at column 4, line 34, a multi-layer dielectric stack is illustrated that may be used to form a transparent construction defining a pattern that is visibly perceptible when viewed from the front side and imperceptible when viewed from the back side. Because the reflectances and transmittances of such a stack are substantially the same from both sides of the stack, color balance "has to be accomplished by some means of filtering in the substrate." (*See* column 4, lines 50-51.) Further, at column 2, lines 18-21, the specification teaches that the "transparent substrate may incorporate integral filtering means adapted to reduce transmission imbalances in a spectral region so as to provide a transmission colour balance." Further, while the embodiment described in connection with Table 3 and the embodiments described in connection with Table 5 employ metal layers, they do not employ metal layers of differing thickness. Thus, the specification clearly teaches that transparent constructions according to the present invention may be constructed without employing metallic layers of different thickness.

The rejection further states that "*applicant is respectfully noted that claims are interpreted in light of the specification, however the limitations of the specification do not read into the claims.*"

(Office Action, p. 3 (emphasis added).) Applicants, however, have not attempted to read any limitation from the specification into the claim. Rather, as demonstrated above, Applicants have taught a variety of ways in which the transparent constructions of the present invention can be fabricated, only some of which employ metallic layers of different thickness. As such, Applicants have presented claims to permit Applicants to claim the invention as broadly as it has been disclosed as opposed to the specific preferred embodiment to which the Examiner refers in her rejection of claims 5, 15, 25, and 26.

For example, as set forth in subparagraph (e) of claims 5 and 25, the first optical coating, second optical coating, and substrate are selected so that the optical transmittance characteristics of the transparent construction through the first reflecting area and second reflecting area are substantially the same to thereby make the pattern substantially visually imperceptible when the transparent construction is viewed from the back side of the substrate. This language contemplates that transmission balancing may be achieved through the use first and second optical coatings having substantially the same optical transmission characteristics, or alternatively through the use of first and second optical coatings that have a transmission imbalance and the use of a substrate that provides filtering in the region of any transmission imbalance between the first and second optical coatings.

By contrast, claims 15 and 26 claim transparent constructions in which the first optical coating and second optical coating have substantially the same optical transmittance characteristics so that the pattern is substantially visually imperceptible when the transparent substrate construction is viewed from the back side of the substrate.

In view of the foregoing, the rejection of claims 5, 15, 25, and 26 should be withdrawn.

Claims 9 and 19 were rejected under 35 U.S.C. § 112, first paragraph, on the basis that the specification fails to adequately teach how the pattern of the filter elements are "devices." The claims use the term "devices" consistently with several accepted definitions of this term. For example, "device" can mean "any result of design." *Black's Law Dictionary*, Seventh Edition (1999) (copy attached). As another example, "device" can mean "[a] decorative design, figure or pattern, as used in embroidery" or a "graphic symbol or motto." *The American Heritage Dictionary of the English Language*, Fourth Edition (2000) (copy attached). As such, the term "devices," as used in the specification and claims, merely constitutes one type of pattern that may be visibly perceptible from the front side of the claimed transparent constructions according to the present invention. Moreover, as would be apparent to those skilled in the art, the predetermined pattern formed by the first and second reflecting areas may be formed into a device by employing suitable masking as taught in the specification. Thus, by forming the first and second reflecting areas in the desired patterns on the surface of the substrate, the first and second reflecting areas will act as the image and background areas, respectively, or vice versa, of a devise comprising, for example, a decorative design, figure, or symbol. Accordingly, the 35 U.S.C. § 112, first paragraph rejection of claims 9 and 19 is without merit and should be withdrawn.

In view of the foregoing, reconsideration and withdrawal of the rejections of claims 5-26 under 35 U.S.C. § 112, first paragraph, is respectfully requested.

The 35 U.S.C. § 112, Second Paragraph, Rejections

Claims 5, 15, 25 and 26 were rejected under 35 U.S.C. § 112, paragraph 2 on the basis that the elements in the group are allegedly not equivalent to each other. The MPEP provides, however, that "when the Markush group occurs in a claim reciting a...combination...it is sufficient if the members of the group are disclosed in the specification to possess ***at least one property*** in common

which is mainly responsible for their function in the claimed relationship, and it is clear from their very nature or from the prior art that all of them possess this property." MPEP 2173.05(h). In the context of the present claims, one relevant property in common is transparency. Although the Office Action notes that plastic film is implicitly not equivalent to an architectural glass, or that a skylight is implicitly not equivalent to a visor, these items do have a common property, namely they are all transparent. Further, when each of these items is employed for its typical purpose, each is viewed from both sides. The for foregoing common properties are clear from the very nature of the specified members and, moreover, the specification explains these common properties (*see*, e.g., column 1, lines 7-43). Another common property is the ability of all the members to act as substrates in the claimed transparent constructions of the present invention. This common property is also explained in the specification as discussed above. In view of the foregoing, the recited members due define a proper Markush group in the context of the instant claims.

Claim 9 and 18 were rejected under 35 U.S.C. § 112, second paragraph, on the basis that the elements recited in the Markush group are not equivalent to each other, thus rendering the scope of the claims unclear. Each element in the Markush group of claims 9 and 19 represents a visible and distinguishable pattern that may be produced on a transparent substrate according to the present invention. As discussed above, for a Markush group to be sufficiently definite, the recited elements merely must share a common property. Here, the common property is a visible pattern. Because each of the recited elements shares this common property that is essential to the functioning of the transparent constructions of the present invention, the claims set forth a proper Markush group. The Office Action also notes that the term "device" is allegedly not properly defined by the claims or specifications, therefore rendering the scope of the claims unclear. As discussed above, the ordinary

definition of the term "device" includes patterns similar to the other recited elements set forth in the Markush group.

In view of the foregoing, reconsideration and withdrawal of the rejection of claims 5-26 under 35 U.S.C. § 112, second paragraph is respectfully requested.

The 35 U.S.C. § 103(a) Rejection

Claims 5-26 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious over U.S. Patent No. 4,715,702 to Dillon in view of U.S. Patent No. 3,679,291 to Apfel. Applicant respectfully traverses.

Dillon discloses a transparent substrate upon which a pattern is visible from a first side of the substrate but imperceptible from the second side of the substrate. The pattern is formed by overlying the substrate (not shown in Fig. 4) with a negative element (28 of Fig. 4), a reflective element (27), and a positive element (26). Dillon teaches that the positive element includes a first area (29) having a first color and a second area (31) having a second color, the combination of the two areas forming a multi-colored pattern. The negative element includes identically formed first and second areas (32 and 33, respectively), however, the negative element is a color negative representation of the positive element. Light passing through the first area of the positive element and the first area of the negative element passes through identical colored areas, but in a different order, as light passing through the second area of the positive element and the second area of the negative element (*see* column 4, lines 1–5). Thus, color balance is achieved for light transmitted through the structure, the viewer seeing a uniform colored hue from the second side of the substrate (*see* column 4, lines 30-34). Dillon further teaches that the reflective element may be of uniform thickness that reflects light passing through the positive element to make the pattern visible from the first side of the substrate. (*See, e.g.*, column 4, lines 27 to 30.)

Claim 5 of the present application claims a transparent construction that includes a reflective pattern. The construction comprises a transparent substrate, a first partially reflective thin film-based optical coating disposed on a first portion of the front surface of the substrate, and a second partially reflective thin film-based optical coating disposed on a second portion of the front surface of the substrate. Each optical coating comprises at least one optical thin film. Further, the first optical coating reflects a first waveband of light in the visible spectrum from light incident on the first reflecting area and the second reflects a second waveband of light in the visible spectrum from light incident on second optical coating, thus resulting in a pattern that is visibly perceptible from the front side of the substrate. The first optical coating, second optical coating and substrate are selected so that the optical transmittance characteristics of the transparent construction through the first reflecting area and the second reflecting area are substantially the same. As a result, the pattern is substantially visually imperceptible when the transparent construction is viewed from the backside of the substrate.

In view of the foregoing, Dillon clearly fails to teach a number of aspects of the transparent construction of claim 5. Dillon does not teach or suggest defining a first reflective area and a second reflective area on a substrate by disposing on first and second portions of the front surface of the substrate first and second thin film-based optical coatings, respectively. Nor does Dillon teach or suggest how to select the substrate and first and second thin film-based coatings so that the transparent construction will have substantially the same optical transmittance characteristics through the first and second reflecting areas, thereby making the pattern substantially visually imperceptible when viewed from the back side of the substrate. Further, Dillon does not teach or suggest a first and second optical thin film coatings that reflect first and second wavebands of light, respectively, from the light incident on the first and second reflecting areas. Rather, the reflective

element 27, which is the only layer that could correspond to the first and second thin film-based optical coatings recited in claim 5 has uniform reflection properties in the visible spectrum over the entire area making up the lens. This is the nature of a metal layer, and is illustrated, for example by the reflectance line for Cr shown in FIG. 7 of the instant application. Thus, Dillon relies on light absorption in positive element (29) to control the color of light reaching the reflective element in two areas as opposed to using first and second thin-film-based optical coatings to actually produce a difference in color in the first and second reflecting areas.

Further, neither Dillon nor Apfel provides any motivation to combine the respective teachings of these references. Dillon teaches that negative and positive acting overlay color proofing film may be used as the positive or negative element, respectively. Use of such film implies that the colored pattern is formed by light absorption in the positive element and that the color balancing is achieved by complementary light absorption in the negative element.

While Dillon teaches that the reflective layer may be a metallic thin film, Dillon does not teach or suggest that the colored areas of either the positive or negative elements may be formed using optical thin films. Indeed, Dillon specifically teaches that color production and color balancing are always achieved through the use of two elements one with a positive image of the desired pattern to be observed and the second with the color negative representation of the positive image to perform color balancing. By contrast, as disclosed in Apfel and in the present application, thin film coatings create color through constructive and destructive interference of light, a process of creating color that is wholly different from the absorption technique taught in Dillon. Indeed, such an approach would be directly contrary to the simplistic approach Dillon teaches to achieve color balancing by ensuring that all light is passed through two absorption filters of the same color (e.g., red and blue) regardless of where the light passes through the sunglass lens. As such, it would not

have been obvious to one skilled in the art to apply the teachings of Apfel to make the color optical elements (29 and 31) of Dillon as asserted in the Office Action. Indeed, Dillon provides no guidance or suggestion to those skilled in the art on how to achieve color balance based on the Examiner's suggested substitution in the Office Action, because there simply would be no complementary positive and negative absorption filters as a result of the suggested substitution. The Examiner's suggested substitution is, therefore, based on impermissible hindsight as opposed to any teaching or suggestion found in the prior art. The Examiner's suggested combination of Apfel with Dillon is also improper as it fails to consider the teachings of Dillon in their entirety, and, as such, is improper. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983).

With respect to Apfel, Apfel is not concerned with creating a filter arrangement that has multiple reflecting areas that reflect different wavebands of light, yet have substantially similar transmission characteristics. Thus, Apfel does not even recognize, much less address, the problem, which the filter arrangements of claim 5 address and solve.

In view of the foregoing, the claimed subject matter of claim 5 plainly represents a non-obvious invention over Dillon in view of Apfel. Dependent claims 6 to 14, because of their dependency on claim 5, also represent non-obvious inventions over the cited art.

Claim 7 is further patentable over the cited references because neither teach nor suggest employing a windscreen or window for a for a land, sea or air transport vehicle as a substrate. Similarly, claim 8 is further patentable over the cited reference because neither teach nor suggest employing a visor for a helmet as a substrate. Claims 13 and 14 are further patentable over the cited references because neither of the reference teach the transparent construction of claim 5 in which the first partially reflective coating comprises at least a first metallic thin film of a predetermined

thickness overlying the front side of the substrate and at least one optical thin film overlying the first metallic thin film.

Claim 25 of the present application claims a method of forming a transparent construction including a reflective pattern that corresponds to the transparent construction of claim 5. The claimed method of claim 25 thus represents a non-obvious invention over Dillon in view of Apfel for the same reasons discussed above in connection with claim 5.

Claim 15 of the present application claims a transparent construction that includes a reflective pattern. The construction comprises a transparent substrate, a first partially reflective, partially transmissive thin film-based optical coating disposed on a first portion of the front surface of the substrate, and a second partially reflective, partially transmissive thin film-based optical coating disposed on a second portion of the front surface of the substrate. The first thin film-based optical coating comprises at least a first metal thin film and one optical thin film overlying the first metal thin film. The second thin film-based optical coating comprises at least a second metal thin film. Each of the thin film-based optical coating reflect a different waveband of light in the visible spectrum. The light reflecting from the first and second thin film-based optical coatings defines a pattern that is visibly perceptible from the front side of the substrate. However, the first and second optical coatings are configured to have substantially the same optical transmittance characteristics such that the pattern is substantially visually imperceptible when the transparent construction is viewed from the backside of the substrate.

As discussed above, Dillon does not teach or suggest defining a first reflective area and a second reflective area on a substrate by disposing on first and second portions of the front surface of the substrate first and second thin film-based optical coating, respectively. Dillon further fails to teach a first thin film-based optical coating that comprises at least a first metal thin film and one

optical thin film overlying the first metal thin film. Nor does Dillon teach or suggest how to adapt the first and second thin film-based coatings to have substantially the same optical transmittance characteristics so that the pattern is substantially visually imperceptible when the transparent construction is viewed from the backside of the substrate. Indeed, Dillon teaches a technique that merely provides for a complementary negative element for achieving color balance and does not teach or suggest providing optical thin film-based coatings having substantially the same optical transmittance characteristics. Nor does it teach or suggest how to accomplish this result.

Again, as discussed above, there is no motivation to combine the teachings of Dillon and Apfel, and any such combination would be contrary to the teachings of Dillon. Further, as noted above, Apfel is not concerned with creating thin film filter arrangements having multiple reflecting areas that reflect different wavebands of light while maintaining substantially similar transmission characteristics. Apfel, therefore, neither recognizes nor teaches the transparent construction which forms the subject matter of claim 15.

Based on the foregoing, the claimed subject matter of claim 15 clearly represents a non-obvious invention over Dillon in view of Apfel. Because claims 16 to 24 are dependent upon claim 15, these claims also represent non-obvious inventions over the cited art.

Claim 17 is further patentable over the cited reference because neither teach nor suggest employing a windscreen or window for a for a land, sea or air transport vehicle as the substrate. Similarly, claim 18 is further patentable over the cited reference because neither teach nor suggest employing a visor for a helmet as the substrate.

Claim 26 of the present application claims a method of forming a transparent construction including a reflective pattern that corresponds to the transparent construction of claim 15. The

claimed method of claim 25 thus represents a non-obvious invention over Dillon in view of Apfel for the same reasons discussed in connection with claim 15.

New claim 27 is patentable over the cited references for the reasons noted above in connection with claim 5.

The 35 U.S.C. § 251 Rejection

Claims 5-26 were rejected under 35 U.S.C. § 251 as allegedly being an improper recapture of broadened subject matter surrendered in the application for the patent upon which the present reissue is based. The stated rejection, however, fails to recognize that "[r]eissue claims that are broader in certain aspects and narrower in others *vis-à-vis* claims canceled from the original application to obtain a patent may avoid the effect of the recapture rule if the claims are broader in a way that does not attempt to reclaim what was surrendered earlier." MPEP 1412.02. For example, in *Ball Corp. v. U.S.*, 729 F.2d 1429, 1438 (Fed. Cir. 1984), the Federal Circuit held that reissue patent claim that was broader in one aspect than cancelled claims but narrower in another was valid. At bottom, if the broadening aspect of a reissue claim relates to subject matter previously surrendered, the Examiner must determine whether the newly added narrowing limitations in the reissue claim modify the claim such that the scope of the claim no longer results in a recapture of the surrendered subject matter. MPEP 1412.02. The Office Action fails to reflect any such inquiry or analysis.

Here, claims 5-26 contain several material limitations not contained in the claims of the original application and therefore have been narrowed in certain material respects from any claims ever presented in the original application. For example, the claims include limitations that the first and second reflecting areas define a predetermined pattern. As another example, the claims contain Markush group limitations with respect to the transparent substrate. The dependent claims specify further material limitations not found in any of the original claims. Thus, claims 5 to 26 of the

present application claim subject matter more narrow in certain material aspects than the claims from the original application, and thus there is no recapture of any putatively surrendered subject matter.

In view of the foregoing, reconsideration and withdrawal of the rejections of claims 5-26 under 35 U.S.C. § 251 is respectfully requested.

CONCLUSION

Based on the foregoing, reconsideration and allowance of the instant application is respectfully requested.

Respectfully submitted,

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